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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,193	12/12/2001	Hitoshi Ashida	HITACHI-0022	6787

21302 7590 04/07/2004

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EXAMINER

LEWIS, CHERYL RENEA

ART UNIT PAPER NUMBER

2177

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/016,193

Applicant(s)

ASHIDA ET AL.

Examiner

Cheryl Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/994,951 parent case.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-21 are presented for examination.

### **DRAWINGS**

2. The applicant's formal drawings submitted on December 12, 2001 and May 31, 2002, paper no. 4 have not been approved by the draftsman. Refer to the attached PTO-948.

### **PRIORITY**

3. Applicant has complied and receives the benefit of priority of an earlier filing date under 35 U.S.C. 119(a-d) to Japanese Patent Application 2000-391834 filed December 20, 2000.

### **Information Disclosure Statement**

4. The information disclosure statement filed December 12, 2001, paper no. 3, fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The following documents listed on the PTO-948 have not been submitted with the application:

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(a) Michael J.A. Berry and Gordon Linoff: 1997; Data Mining Techniques for Marketing, Sales, and Customer Support; Overview of Data Mining Techniques; pp. 119-123.

(b) Hitoshi ASHIDA and Toyohisa Morita; 1999; 1999 IEEE International Conference on Systems, Man, and Cybernetics; Human Communication and Cybernetics; pp. V-882-V-88.

(c) Toyoshia Morita, Yoshinori Satou, Erika Ayukawa, and Akira Maeda; 200; Information and Knowledge Management in the 21<sup>st</sup> Century; INFORMS-KORMS Seoul 2000 Conference; Customer Relationship Management Through Data Mining; parts 1-6.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/994,951. Although the conflicting claims are not identical,

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they are not patentably distinct from each other because the claim language of claims 1-21 are similar to the claim language of claims 1-18 of Application No. 09/994,951. It appears that the applicants have merely reworded the claim language of claims 1, 7, and 13 of Application No. 09/994,951 which is presented in claims 1, 8, and 5 of the instant application. Also, the applicants have included the claim language of dependent claims 2, 9, and 16 of the instant application to appear in independent claims 1, 7, and 13 of Application No. 09/994,951. Official Notice is given that it is well settled that the removal of limitations from a claimed invention, where the remainder of the structure is unaffected, would have been obvious.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The similar claim language of the instant application (10/016,193) and Application No. 09/994,951 is presented in italicized text. The difference in the claim language of the instant application (10/016,193) and Application No. 09/994,951 appears in underline text.

a. Independent Claims 1, 8, and 15 of the instant application:

*A method of database management, comprising the steps of:*  
*generating characteristic rules based upon data definition information and data, the data definition information including items specifying analysis and conditions; generating a multidimensional database based upon the characteristic rules, the data and the data definition information, the multidimensional database being organized based upon conclusion items and condition items of the characteristic rules, the conclusion items*

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*specifying an analysis dimension, the condition items specifying a key dimension; selecting one of the characteristic rules; extracting a selected segment and a speculation data list from the data based upon the condition items and the selected one of the characteristic rules, the selected segment specifying conditions for selecting the speculation data list; generating a speculation model base upon the data the selected segment and the speculation data list; selecting one of the speculation models; and outputting speculation results based upon the speculation model and the speculation data list.*

Dependent claims 2, 9, and 16 of the instant application:

*Displaying a portion of the multidimensional database that is corresponding to the selected one of the characteristic rules, the displayed portion being organized in rows and columns to define cells based upon the condition items of the selected one of the characteristic rules, the cells each having a value for the analysis dimension.*

Independent Claims 1, 7, and 13 of Application No. 09/994,951, included in independent claims 1, 7, and 13 are dependent claims language 2, 9, and 16 of the instant application.

*A method of database management, comprising the steps of:*

*generating characteristic rules based upon data definition information and data, the data definition information including items specifying analysis and conditions; generating a multidimensional database based upon the characteristic rules, the data and the data definition information, the multidimensional database being organized based upon conclusion items and condition items of the characteristic rules, the*

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*conclusion items specifying an analysis dimension, the condition items specifying a key dimension; selecting one of the characteristic rules; displaying a portion of the multidimensional database that is corresponding to the selected one of the characteristic rules, the displayed portion being organized in rows and columns to define cells based upon the condition items of the selected one of the characteristic rules, the cells each having a value for the analysis dimension; modifying the condition items; displaying another portion of the multidimensional database that is corresponding to the modified condition items; extracting a selected segment and a speculation to data list from the data based upon the modified condition items and the selected one of the characteristic rules, the selected segment specifying conditions for selecting the speculation data list; generating a speculation model base upon the data, the selected segment and the speculation data list; and outputting speculation results based upon the speculation model and the speculation data list.*

- b. Dependent Claims 3, 10, and 17 of the instant application are identical to dependent claims 2, 8, and 14 of Application No. 09/994,951.
- c. Dependent Claims 4, 11, and 18 of the instant application are identical to dependent claims 3, 9, and 15 of Application No. 09/994,951.
- d. Dependent Claims 5, 12, and 19 of the instant application are identical to dependent claims 4, 10, and 16 of Application No. 09/994,951.
- e. Dependent Claims 6, 13, and 20 of the instant application are identical to dependent claims 5, 11, and 17 of Application No. 09/994,951.

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- f. Dependent Claims 7, 14, and 21 of the instant application are identical to dependent claims 6, 12, and 18 of Application No. 09/994,951.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to



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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2, 4, 6-9, 11, 13-16, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamoto et al. (Pat. No. 6,671,680 B1 filed November 22, 2000, Foreign Priority/Japan filed January 28, 2000 No. 2000-019565, hereinafter Iwamoto); Malloy et al. (Pat. No. 6,122,636 filed May 13, 1999, hereinafter Malloy); and Basch et al. (Pat. No. 6,658,393 B1 filed September 15, 1999, hereinafter Basch).

9. Regarding Claims 1, 6, 8, 13, 15, and 20, Iwamoto teaches a data mining apparatus and storage medium storing therein data mining processing program.

The method and associated system for a data mining apparatus and storage medium storing therein data mining processing program as taught or suggested by Iwamoto includes:

generating characteristic rules (col. 3, lines 25-30, '...classification processing unit for forming characteristics of a specific analysis item among a plurality of analysis items by predicting an unknown rule in which the other analysis items as condition values...', col. 10, lines 10-12 and 44-49) based upon data definition information (col. 10, 28-43, 'As attribute information, the fields of this record include "year, country, MPG (fuel economy)..."') and data definition information (col. 10, 28-43, 'As attribute information, the fields of this record include "year, country, MPG (fuel economy)..."') including items specifying analysis (col. 10, lines 13-19, figure 2A element 46 'Analysis Sheet') and conditions (col. 10, lines 13-19, figure 2A element 16 'online analytical

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processing tool'); data and data definition information based upon conclusion items (figure 2B 'Analysis Result', col. 8, lines 1-17 and 20-32) and condition items (col. 11, lines 60-63); data storage unit (col. 7, line 65); a user interface unit (col. 7, lines 30 and 31); dividing the data list (col. 9, lines 3-35).

However, Iwamoto does not expressly teach generating a multidimensional database.

Malloy teaches a multidimensional database (Abstract, lines 3-7, 'A multi-dimensional database is defined based...' ) based upon characteristics (Abstract, lines 3-11, 'A multi-dimensional data base is defined having a set of multi-dimensional data blocks and a set of identifiers comprising selected dimensions of multi-dimensional data...', col. 5, lines 63-67, col. 6, lines 1-8, '...the year 1997 204 and all quarters, Q1...members of the Time dimension...'), condition items of the characteristics (col. 5, lines 63-67, col. 6, lines 1-8, 'A dimension 202, 214, or 222 is a structural attribute that is a list of members, all of which are of similar type...'), and items specifying a key dimension (col. 7, lines 44-50, col. 10, lines 26-34 and 55-63); selecting characteristics (col. 7, lines 1-9) and extracting a selected segment (col. 6, lines 37-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the olap method of Iwamoto's method with the olap method of Malloy because Malloy's olap method enables a system to support a wide-range of multi-dimensional reporting and analysis applications, the application components provide data access, navigation, data management, storage and retrieval

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of data, and analytical calculations for the plurality of multi-dimensional data stored within the multi-dimensional database (col. 4, lines 42-52).

However, Malloy does not expressly teach extracting a selected segment speculation data list.

Basch teaches a speculation data list (col. 6, lines 56-67, col. 7, lines 1-15, figure 1, element 100) and a selection segment (col. 8, lines 52-58, col. 9, lines 13-35, figure 1, element 112) of the speculation data list; generating a speculation model base upon the data (col. 11, lines 47-65); selecting one of the speculation models (col. 11, lines 47-67 and col. 12, lines 1-28); and outputting (col. 4, lines 33-36, col. 10, lines 1-8) speculation results based upon the speculation model (col. 11, lines 47-65) and the speculation data list (col. 6, lines 56-67, col. 7, lines 1-15, figure 1, element 100); and verification data (Abstract, lines 8-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the multi-dimensional database of Malloy's method with the multi-dimensional database method of Basch because Basch's multi-dimensional database provides dimensional data or model cubes, wherein the model cubes contain metadata and are representative of summarized dimensional data's model definition and characterization (col. 12, lines 1-35).

10. Regarding Claims 2, 9, and 16, the limitations of these claims has been noted in the rejection above. In addition, Iwamoto teaches having a value for the analysis (col. 10, lines 34-40).

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Malloy teaches the multidimensional database is corresponding to the selected characteristics (col. 5, lines 63-67, col. 6, lines 1-8, col. 7, lines 1-9), the displayed (col. 7, lines 6-9) porting being organized in rows (Abstract, lines 13-15) and columns (col. 6, lines 10-26) to define cells (col. 6, lines 10-26).

11. Regarding Claims 4, 11, and 18, Malloy teaches speculation results include the selected segment (col. 4, lines 33-36, col. 10, lines 1-8, col. 11, lines 47-65).

12. Regarding Claims 7, 14, and 21, Malloy teaches the means which essentially comprises the same means as the evaluation value means (col. 4, lines 24-31).

13. Claims 3, 5, 10, 12, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamoto et al. (Pat. No. 6,671,680 B1 filed November 22, 2000, Foreign Priority/Japan filed January 28, 2000 No. 2000-019565, hereinafter Iwamoto); Malloy et al. (Pat. No. 6,122,636 filed May 13, 1999, hereinafter Malloy); and Basch et al. (Pat. No. 6,658,393 B1 filed September 15, 1999, hereinafter Basch) as applied to claims 1, 8, and 15 above, and further in view of Yost et al. (Pat. No. 6,567,796 B1 filed July 1, 1999, hereinafter Yost).

14. Regarding Claims 3, 10, and 17, Iwamoto, Malloy, and Basch do not expressly teach a predetermined subscribed service and a cancellation of the predetermined subscribed service.

Yost teaches a predetermined subscribed service (figure 1, element 42, 44, 46, 48, 52, and 54) and a cancellation of the predetermined subscribed service (col. 12, lines 35-45).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the methods of Iwamoto, Malloy, and Basch with the method of Yost because Yost's method enables generating output from an on-line analytical processing system, the system enabling administrators to provide services including a service that generates information to subscribers at a given time interval and an alert service having information provided to all subscribers if an alert condition is true (Abstract, lines 1-16, col. 7, lines 55-64).

15. Regarding Claims 5, 12, and 19, Yost teaches a pull-down menu and selecting by a pointing device (col. 12, lines 35-50).

### **CONCLUSION**

16. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

A. Durrant et al. (U.S. Pat. No. 6,691,120 B1) discloses a system, method and computer program product for data mining in a normalized relational database.

### **NAME OF CONTACT**

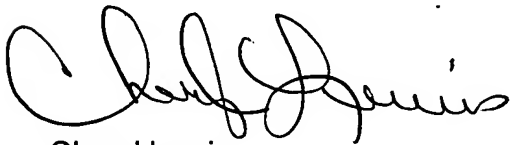
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Lewis whose telephone number is (703) 305-8750. The examiner can normally be reached on 6:30-3:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

(703) 746-5651 (Use this FAX #, only after approval by Examiner, for "INFORMAL" or "DRAFT" communication. Examiners may request that a formal paper/amendment be faxed directly to them on occasions.).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Cheryl Lewis  
Patent Examiner  
April 1, 2004



JOHN BREENE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100